

## REMARKS

The Office Action sets forth various informalities regarding the present reissue patent application. This "Response to Office Action" and the accompanying documents address all of the informalities recited in the Office Action.

In particular, the previously entered specification amendments are recited herein, with the additional correction of the inadvertently introduced typographical error pointed out in the Office Action (see page 5). The precise additional specification change is recited in Appendix A (specifically, "form" changed to "from" in the Table 5 title). In addition, the cumulative previously described claim amendments are recited herein in the proper format, with the additional changes wherein (a) claims 71-75 have been cancelled as drawn to a nonelected invention in response to a restriction requirement recited in the Office Action (see page 3) and (b) claims 48, 49, 51, 53, and 56 have been further amended to merely address the claim objections recited in the Office Action (see page 7). The precise changes in addition to the cumulative previously described claim amendments are recited in Appendix B hereto (specifically, the addition of periods at the end of claims 48, 49, 51, and 53, and the addition of the word "and" to the Markush group of claim 56). Lastly, the previously described abstract amendment is recited herein, with no additional changes thereto.

A copy of the original patent with all cumulative deletions appearing in square brackets and all cumulative additions appearing in underline is provided herewith for convenience sake.

The original executed "Declaration Under 37 C.F.R. § 1.132 of Atsushi Sogabe" dated November 6, 2003, is submitted herewith. The original executed Rule 132 Declaration replaces the inadvertently defective copy of the Rule 132 Declaration previously submitted and made of record. Please note that the indication of "2003. 11. 6" is inserted after the word "Date:" on the last page of the Rule 132 Declaration. The indication of "2003. 11. 6" unambiguously stands for "2003 - November - 6." The original executed Rule 132 Declaration addresses the concerns pertaining to the Rule 132 Declaration as recited in the Office Action (see pages 4 and 7-8).

In the event the date format of the original executed Rule 132 Declaration (discussed immediately above) is deemed unacceptable, a newly executed original Rule 132 Declaration also is submitted herewith. The newly executed original Rule 132 Declaration is identical to the original earlier executed Rule 132 Declaration, except for correction of a typographical error pertaining to the date of a reference cited on the last line of paragraph 17.

A "Supplemental Combined Declaration and Power of Attorney" executed by all of the applicants also is submitted herewith. The supplemental oath/declaration addresses the concerns pertaining to the previously submitted oaths/declarations as recited in the Office Action (see pages 5-6)

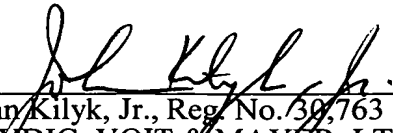
Applicants further submit an "Information Disclosure Statement" that sets forth the references identified in the Rule 132 Declaration. The Information Disclosure Statement addresses the concerns pertaining to the recitation of the identified references on the face of any resulting reissue patent as recited in the Office Action (see page 4).

Lastly, a "Surrender of Original Patent," along with the actual original U.S. Patent No. 6,080,553, is being concurrently submitted so as to address the concern pertaining to the surrender of the original patent as recited in the Office Action (see page 9).

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

In re Appln. of Sogabe et al.  
Application No. 09/941,940

Respectfully submitted,



---

John Kilyk, Jr., Reg. No. 30,763  
LEXDIG, VOIT & MAYER, LTD.  
Two Prudential Plaza, Suite 4900  
180 North Stetson  
Chicago, Illinois 60601-6780  
(312) 616-5600 (telephone)  
(312) 616-5700 (facsimile)

Date: February 4, 2004

**EXHIBIT A – Additional Specification Amendments**  
(deletions indicated by crossout and additions underlined)

The specification, specifically the paragraph at column 11, line 65-column 12, line 29, was additionally amended herein as follows:

Table 5 shows the purification performed so far. Table 6 shows physicochemical properties of the creatine amidinohydrolase obtained by the above methods.

**TABLE 5**  
Purification of creatine amidinohydrolase ~~from~~ from *Escherichia Coli*  
JM109 (pCRH273M3)

Step	Total activity (U)	Specific activity (U/mg-protein)	Yield (%)
French press rupture	49800		100.0
(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> precipitation- redissolution	43027	8.3	86.4
Sephadex G-25	39989	9.9	80.3
Octyl Sepharose CL-6B	32021	14.8	64.3

**TABLE 6**  
Physicochemical properties of creatine amidinohydrolase purified  
from *Escherichia coli* JM109 (pCRH273M3)

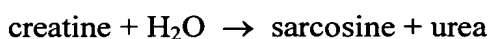
Item	Physicochemical properties
Action	creatine + H <sub>2</sub> O → sarcosine + urea
Optimal temperature	ca. 40° C-45° C
Optimal pH	ca. 8.0-9.0
Thermal stability	ca. 40° C (50 mM potassium phosphate buffer, pH 7.5, 30 min treatment)
pH stability	ca. 5-8 (40° C, 18 hr preservation)
Km value	ca. 9.0 mM (creatine)
Molecular weight	ca. 43,000 (SDS-PAGE)
Isoelectric point	ca. 4.5 (isoelectric focusing)

**EXHIBIT B – Additional Claim Amendments**  
(deletions indicated by crossout and additions underlined)

The previously described claims were additionally amended as follows:

48. A creatine amidinohydrolase having the following physicochemical properties:

Action: catalyzing the following reaction;



Optimum temperature: about 40-50° C (at pH of about 7.5)

Optimum pH: pH about 8.0 - 9.0 (at a temperature of about 37° C)

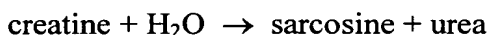
K<sub>m</sub> value for creatine in a coupling assay using a sarcosine oxidase and a peroxidase:  
3.5 - 10.0 mM

Molecular weight: about 43,000 (SDS-PAGE)

Isoelectric point: about 4.5<sub>2</sub>

49. A creatine amidinohydrolase having the following physicochemical properties:

Action: catalyzing the following reaction;



Optimum temperature: about 40-50° C (at pH of about 7.5)

Optimum pH: pH about 8.0 - 9.0 (at a temperature of about 37° C)

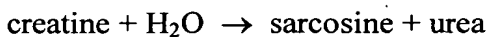
K<sub>m</sub> value for creatine in a coupling assay using a sarcosine oxidase and a peroxidase:  
4.5±1.0 mM

Molecular weight: about 43,000 (SDS-PAGE)

Isoelectric point: about 4.5<sub>2</sub>

51. A creatine amidinohydrolase having the following physicochemical properties:

Action: catalyzing the following reaction;



Optimum temperature: about 40-50° C (at pH of about 7.5)

Optimum pH: pH about 8.0 - 9.0 (at a temperature of about 37° C)

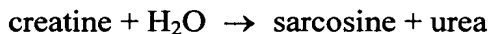
K<sub>m</sub> value for creatine in a coupling assay using a sarcosine oxidase and a peroxidase:  
6.5±1.0 mM

Molecular weight: about 43,000 (SDS-PAGE)

Isoelectric point: about 4.5.

53. A creatine amidinohydrolase having the following physicochemical properties:

Action: catalyzing the following reaction;



Optimum temperature: about 40-50° C (at pH of about 7.5)

Optimum pH: pH about 8.0 - 9.0 (at a temperature of about 37° C)

K<sub>m</sub> value for creatine in a coupling assay using a sarcosine oxidase and a peroxidase:  
9.0±1.0 mM

Molecular weight: about 43,000 (SDS-PAGE)

Isoelectric point: about 4.5.

56. The method of claim 55, wherein said microorganism is selected from the group consisting of *Escherichia coli* JM109 (pCRH273M1) (FERM BP-5374), *Escherichia coli* JM109 (pCRH273M2) (FERM BP-5375), and *Escherichia coli* JM109 (pCRH273M3) (FERM BP-5376).

Cancel claims 71-75.